

Proposal to the Office of the Governor of North Carolina



Governor Cooper

100% Renewable Energy in Municipalities  
Working Group

Request for the creation of a Working Group to:

Make recommendations on how to best enable and support North Carolina municipalities to transition to 100% renewable energy in all sectors by 2050.

## Justification

### The Problem

Global warming, air pollution, and energy insecurity are three of the most significant problems facing the world today, and they are unavoidably intertwined. These three global problems impact North Carolina in the following areas:

- **Security**
  - Food scarcity, water insecurity, an increase in migration to our state, and threats to infrastructure from sea level rise and extreme weather events all threaten security in North Carolina.
- **Health, Human Safety & Mortality**
  - The increase in global temperatures correlates with an increase in disease-causing pests (including from mosquitos and ticks).<sup>1</sup>
  - Poor conditions of North Carolina's polluted and unsafe waters are exacerbated from drought, extreme weather events, flooding, and warming waters, further spreading disease and waterborne pathogens.
  - Fossil fuel transportation emissions represent the largest single source of toxic air pollution in the United States,<sup>2</sup> where asthma treatment alone costs North Carolina nearly \$1 billion annually.<sup>3</sup>
  - According to the WHO, the direct damage costs to health attributable to climate change (*excluding* costs in health-determining sectors such as agriculture and water and sanitation), is estimated to be between \$2-4 billion/year by 2030. Instances of illness and death increase even for small differences of increased seasonal temperature.<sup>4</sup>
- **Agriculture**
  - For every degree of warming, yields in cereal crops drop by at least 10%.<sup>5</sup>
  - Increases in CO<sub>2</sub> correlate with increases in plant pests.<sup>6</sup>
  - Increases in CO<sub>2</sub> correlate with a lowering of nutrition in our crops.<sup>7</sup>
- **Labor**
  - Increased temperatures impacts outdoor labor costs in areas of lost work and related heat illnesses, particularly in rural areas.<sup>8</sup>
- **Economic Welfare**
  - In the United States, the combined value of market and nonmarket damage in all of the areas listed above increases dramatically with the increase in global temperature, costing roughly 1.2% of GDP for every +1°C.<sup>9</sup>

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<sup>1</sup> Vector-borne disease, cities and climate Change, National Institutes of Health, [ [HYPERLINK "https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5063770/"](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5063770/) ], (October 2016).

<sup>2</sup> "The Hidden Costs of Fossil Fuels" from Union of Concerned Scientists, [ [HYPERLINK "http://www.ucsusa.org/clean-energy/coal-and-other-fossil-fuels/hidden-cost-of-fossils"](http://www.ucsusa.org/clean-energy/coal-and-other-fossil-fuels/hidden-cost-of-fossils) ] (August 30, 2016).

<sup>3</sup> "The Burden of Asthma in North Carolina" from NC Department of Health and Human Services, (2010).

<sup>4</sup> Climate Change and Health, World Health Organization, [ [HYPERLINK "http://www.who.int/mediacentre/factsheets/fs266/en/"](http://www.who.int/mediacentre/factsheets/fs266/en/) ], (June 2017).

<sup>5</sup> Wallace-Wells, David, "The Uninhabitable Earth," in The New Yorker, (June 9, 2017).

<sup>6</sup> Rusch, Adrien et al, Agricultural landscape simplification reduces natural pest control: A quantitative synthesis," from Agriculture, Ecosystems and Environment, 221, 198-204 (2016).

<sup>7</sup> Datz, Todd, "Rising CO<sub>2</sub> poses significant threat to human nutrition," in Harvard Gazette, [ [HYPERLINK "https://news.harvard.edu/gazette/story/2014/05/rising-co2-poses-significant-threat-to-human-nutrition/"](https://news.harvard.edu/gazette/story/2014/05/rising-co2-poses-significant-threat-to-human-nutrition/) ] (May 7, 2014).

<sup>8</sup> Takakura, Jun'ya, et al, "Cost of Preventing Workplace Heat-related Illness Through Worker Breaks and the Benefit of Climate-Change Mitigation," IOP Science, [ [HYPERLINK "http://iopscience.iop.org/article/10.1088/1748-9326/aa72cc/meta"](http://iopscience.iop.org/article/10.1088/1748-9326/aa72cc/meta) ] (June 13, 2017).

<sup>9</sup> Hsiang et al, Science 356, "Estimating economic damage from climate change in the United States" 1362-1369 (2017).

We have already experienced a 1.15°C increase<sup>10</sup> and if we do not take measures immediately to address these problems this number will continue to rise and reach levels that are catastrophic for North Carolina in all of the areas above.

### The Solution

A strategy is needed to convert the current fossil fuel energy infrastructure of communities across North Carolina as quickly as possible to an infrastructure powered by 100% wind, water and sunlight for all purposes, namely electricity, transportation, industry, and heating and cooling. Such a strategy is critical in resolving these problems to insure the future prosperity of North Carolina citizens.

### Challenges

While the majority of world governments are mobilizing to develop solutions as quickly as possible and are investing in renewable energy infrastructure and research, the Trump administration has taken major steps to ignore these most devastating problems faced by our nation, and even contributes to worsening them. In North Carolina, Duke Energy continues to push development of fossil fuel infrastructure, proposing \$40 billion in new grid additions, and pipeline and power plant construction over the next decade, costs that will be borne by citizens and threaten our economic prosperity. The Republican legislature is encouraging Duke to follow this path, simultaneously working to hinder development of renewable infrastructure in North Carolina, where renewable energy infrastructure would be a much more affordable path than the fossil fuel-rich plan Duke Energy proposes. On the order of billions.<sup>11</sup>

Citizens, business leaders, states and local municipalities around the country are stepping up to help solve these problems. Many cities, towns and counties across North Carolina have even signed a resolution agreeing to the imperative of pursuing 100% renewable energy in all sectors by 2050.<sup>12</sup> Polls show that over 80% of North Carolina citizens support powering all energy entirely by clean and renewable sources.<sup>13</sup> However, a resolution is not a solution without a feasible action plan to make it happen. And municipalities in North Carolina effectively have their hands tied behind their backs from: 1) fear of reprisals, 2) lack of legislative authority, 3) a lack of know-how, and 4) a lack of support.

### An Actual Solution

A bottom-up solution may be our best hope in solving these problems, but it will only be successful if communities have the tools to make it happen. These tools require the support of North Carolina government. And while the general assembly in North Carolina holds a majority that is strongly opposed to solving these most urgent problems, Governor Cooper has certain authority that can make an enormous difference in helping move communities forward in this effort.

In creating a Working Group to support municipalities in pursuing 100% renewable energy, Governor Cooper could:

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<sup>10</sup> NOAA, "Global land temperature for June 2017," in *Global Climate Report*, [ [HYPERLINK "https://www.ncdc.noaa.gov/sotc/global/201706"](https://www.ncdc.noaa.gov/sotc/global/201706) ] (June 2017).

<sup>11</sup> Powers, Bill, *North Carolina Clean Path 2025* (2017), 37-38.

<sup>12</sup> NC Climate Solutions Coalition, [ [HYPERLINK "http://ncclimatesolutions.org/legislation/resolutions/local/clean-energy-green-jobs-resolutions"](http://ncclimatesolutions.org/legislation/resolutions/local/clean-energy-green-jobs-resolutions) ] (Referenced August 9, 2017).

<sup>13</sup> Conservatives for Clean Energy poll [ [HYPERLINK "http://www.cleanenergyconservatives.com/wp-content/uploads/2017/03/Clean-Energy-March-2017Final-3-13-2017.pdf"](http://www.cleanenergyconservatives.com/wp-content/uploads/2017/03/Clean-Energy-March-2017Final-3-13-2017.pdf) ] (2017). NC Sustainable Energy Association, Fallon Research, [ [HYPERLINK "https://energync.org/wp-content/uploads/2017/03/Fallon\\_Report\\_Results\\_2014.pdf"](https://energync.org/wp-content/uploads/2017/03/Fallon_Report_Results_2014.pdf) ] (2014).

1. Encourage local leaders to action, effectively lowering their fear of reprisals from conservative NC legislators through his public endorsement of their pursuits.
2. Bring knowledge of grants, incentives and opportunities to communities and our state.
3. Support communities in working together to structure incentives for green business development, encouraging job growth and keeping money local.
4. Create tools to support farmers and help them adapt for a warming climate across the state.
5. Educate local leaders and the public on energy efficiency strategies.

**The purpose of creating a Working Group is to discover the wide variety of opportunities Governor Cooper has available to him to support municipalities and help solve these most significant problems.** These are just a few examples.

### The Benefits of a Solution

The primary benefit is helping solve three of the most significant problems facing the world today: global warming, air pollution, and energy insecurity. But there are several other important benefits for North Carolina:

- **Job Creation:** Renewables bring jobs in many areas, including innovation in technology, infrastructure, and manufacturing. A few recent statistics demonstrate powerful employment reasons for North Carolina to pursue leadership in this industry:
  - 1 in 50 new jobs added in the United States in 2016 were in the solar industry, increasing 17 times faster than the total US economy.<sup>14</sup>
  - There was a 25% increase in workers in the solar industry in 2016 over 2015.<sup>15</sup>
  - In the United States, more people were employed in solar power in 2016 than in generating electricity through coal, gas and oil energy *combined*.<sup>16</sup>
  - At least twice as many jobs would be created in North Carolina from developing a renewable infrastructure than would be by following the plan Duke Energy proposes.<sup>17</sup>
- **Economics:** Economic prosperity for North Carolina would come through job creation, but also through encouraging business development in renewable technologies. An outcome of this Working Group should include a plan to identify opportunities for communities to keep money local and strengthen rural finances.
  - Total contribution of renewables to gross state product was \$10.9 billion between 2007 and 2016.<sup>18</sup>
  - North Carolina revenues generated by clean energy activities in 2016 alone totaled \$6.4 billion.<sup>19</sup>
- **Bipartisan Support Across the State:**
  - Over 80% of North Carolina citizens support powering all energy through renewables, regardless of party affiliation.<sup>20</sup>

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<sup>14</sup> CNN Money, [ [HYPERLINK](http://money.cnn.com/2017/05/24/news/economy/solar-jobs-us-coal/index.html)

"<http://money.cnn.com/2017/05/24/news/economy/solar-jobs-us-coal/index.html>" ] (Referenced August 9, 2017).

<sup>15</sup> Solar Foundation, National Solar Jobs Census, [ [HYPERLINK](http://www.thesolarfoundation.org/national)

"<http://www.thesolarfoundation.org/national>" ] (Referenced August 9, 2017).

<sup>16</sup> Forbes, [ [HYPERLINK](https://www.forbes.com/sites/niallmccarthy/2017/01/25/us-solar-energy-employs-more-people-than-oil-coal-and-gas-combined-infographic/) "https://www.forbes.com/sites/niallmccarthy/2017/01/25/us-solar-energy-employs-more-people-than-oil-coal-and-gas-combined-infographic/"] [ "2f3cae452800" ] (Referenced August 9, 2017).

<sup>17</sup> Powers, Bill, *North Carolina Clean Path 2025* (2017), 39.

<sup>18</sup> *ibid*

<sup>19</sup> Aldina, Robin, Urlaub, Ivan. NC Sustainable Energy Association, "2016 North Carolina Clean Energy Industry Census" (2017) 5.

<sup>20</sup> Conservatives for Clean Energy poll [ [HYPERLINK](http://www.cleanenergyconservatives.com/wp-content/uploads/2017/03/Clean-Energy-March-2017Final-3-13-2017.pdf)

"<http://www.cleanenergyconservatives.com/wp-content/uploads/2017/03/Clean-Energy-March-2017Final-3-13-2017.pdf>" ] (2017). NC Sustainable Energy Association, Fallon Research, [

- The benefits of renewable energy for jobs and economic development in rural communities, which are largely conservative, is a platform for common ground and an opportunity to be a champion of the people in these locations.
- A strategy supporting a transition to 100% renewable energy in North Carolina is positive for every legislative district. As North Carolina produces no fossil fuel, no community is economically hindered by a transition to a 100% renewable energy sources, and as renewable energy is more dispersed, every county has an opportunity to gain from this transition. Renewable energy is an issue that can unite rural and urban voters alike and is therefore worthy of the Governor to study how this economic opportunity can be brought to fruition in every legislative district.

## Goals

The goals of the 100% Renewable Energy in Municipalities Working Group would include the following examples:

- Identify opportunities available to Governor Cooper, through his own powers of authority, to support municipalities.
- Recommend policies, or roadblocks of existing policies, that could be written or changed to support municipalities.
- Identify opportunities for renewable energy investment in the state.
- Review existing plans for pursuing 100% renewable energy and make recommendations.
- Develop a plan to educate municipalities and their communities on energy efficiency and renewable energy opportunities.
- Work with municipal leaders to identify roadblocks and challenges faced in moving to 100% renewable energy and develop recommendations to address them.
- Provide recommendations for further opportunities and areas of study for the state to pursue that fall outside the scope of this working group but still serve to solve the larger problems identified in this proposal.

## Timeline

The Working Group would first work to develop a formal set of goals and a timeline to be presented to Governor Cooper for approval. A final report of findings and recommendations would be presented to Governor Cooper within one year of his Executive Order to form this Working Group. Ideally, this report would be presented before the 2018 election.

## Working Group Members

Governor Cooper should appoint the 100% Renewable Energy Working Group members through executive order. Ideally, this group would consist of approximately 20-25 members. Members from the following areas might be considered:

Renewable Energy  
 NC Sustainable Energy Association  
 Municipal Utilities  
 Municipal Government – large, small and midsized  
 NC League of Municipalities  
 NC Association of County Commissioners  
 Energy Policy  
 Military Leadership  
 Nicholas Institute

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HYPERLINK "[https://energync.org/wp-content/uploads/2017/03/Fallon\\_Report\\_Results\\_2014.pdf](https://energync.org/wp-content/uploads/2017/03/Fallon_Report_Results_2014.pdf)" ] (2014).

Education Development  
Communications  
Finance (eg. Environmental Finance Center)  
Public  
Organizations  
    Office of Tribal Affairs  
    Electric Cooperatives  
    UNC / Higher Education  
    Community Colleges  
    NC Justice Centers